

ABSTRACT

A preferred method and algorithm of compressing IPv6 addresses is presented which ensures smaller memory occupancy for IPv6 routing tables and databases in general (applicability to particular case of databases of the routing protocol OSPF for IPv6 is described). A method and algorithm of comparison of such compressed IPv6 addresses without decompression is presented, a method of comparison that ensures in the majority of cases better comparison performance than for the case of comparing uncompressed IPv6 addresses. Also, a preferred method and algorithm of decompressing IPv6 addresses that were compressed using this preferred format is given, and a method and algorithm of comparison of an uncompressed IPv6 address with a compressed IPv6 address without decompression. The exemplary comparison methods may achieve or exceed comparable performance with the performance of comparing uncompressed addresses. Illustrations for the particular case of the routing protocol OSPF for IPv6 are presented for all cases.